PROC. ENTOMOL. SOC. WASH.
106(1), 2004, pp. 233–234

NOTE

Ochlerotatus japonicus japonicus (Theobald) (Diptera: Culicidae), a New Invasive Mosquito for Georgia and South Carolina

Exotic mosquitoes pose a threat to public health and the environment. Some recently introduced species such as *Aedes albopictus* (Skuse) are serious pests and transmit pathogens to humans and domestic animals. *Ochlerotatus japonicus japonicus* (Theobald) is the most recently recognized species of exotic mosquito to become established in the continental United States (Peyton et al. 1999, Darsie 2002). Adult mosquitoes were initially reported from New York and New Jersey (Peyton et al. 1999). Larvae of *Oc. japonicus* were later found in natural and artificial containers such as treeholes and used tires (Andreadis et al. 2001). Scott et al. (2001) reported that *Oc. japonicus* was the most commonly collected rockpool-dwelling mosquito in the Delaware Water Gap National Recreation Area. Scott et al. (2001) and Andreadis et al. (2001) noted that this mosquito also inhabits rockpools in Japan. Since the discovery of wild *Oc. japonicus japonicus* populations in New Jersey and New York, it rapidly expanded its range to Connecticut (Andreadis et al. 2001), Pennsylvania, Ohio, Maryland (Fonseca et al. 2001), and Virginia (Harrison et al. 2002). The public health implications of this exotic mosquito are unknown, but it can transmit Japanese encephalitis virus to mice in laboratory experiments (Peyton et al. 1999). We report the discovery of populations of *Oc. japonicus japonicus* in Georgia and South Carolina.

We collected 13 mosquito larvae and 4 mosquito pupae from a leaf-lined rockpool adjacent to the Tallulah River, Southern Nantahalla Wilderness, Rabun County, Georgia, 34.9402°N, 83.5454°W, elevation 657 m, on 23 July 2003. In the laboratory, four adult mosquitoes emerged from the pupae within 24 hours and were identified as *Oc. japonicus japonicus* with the keys of Darsie (2002) and Darsie and Ward (1981). Ten of the larvae were *Oc. japonicus japonicus* and three were a native rockpool mosquito *Ochlerotatus atropalpus* (Coquillett). We sampled similar habitats in South Carolina and collected 28 *Oc. japonicus japonicus* and 2 *Oc. atropalpus* larvae from four rockpools along the Middle Saluda River, Jones Gap State Park, Greenville County, South Carolina, 35.1252°N, 82.5733°W, elevation 420 m, on 26 and 30 July 2003. The larvae collected on 30 July were infected with a symbiotic trichomycete fungus *Smittium* sp. that develops in their hindguts. No other symbiotes were noted. Our collections suggest that *Oc. japonicus japonicus* has invaded the southern Appalachians since Darsie (2002) reported it from the Northeast and central Atlantic States. Our collection in Georgia was less than 3 km from the North Carolina border, indicating that this mosquito probably occurs in North Carolina. There are no major urban centers near either collection site and these mosquitoes probably colonized both sites without human-assisted transportation. Our collections are significant for mosquito control programs because *Oc. japonicus* will bite humans. This mosquito could be involved in the transmission of economically important pathogens such as West Nile encephalitis virus or *Dirofilaria immitis* (Leidy). Voucher specimens of larval and adult *Oc. japonicus japonicus* including larvae preserved in 95% ethanol for DNA analysis were deposited in the Clemson University Arthropod Collection.

We thank P. H. Adler for reviewing a draft of this manuscript.

Literature Cited

Andreadis, T. G., J. F. Anderson, L. E. Munstermann, R. J. Wolfe, and D. A. Florin. 2001. Discovery, distribution, and abundance of the newly introduced mosquito *Ochlerotatus japonicus* (Diptera: Culicidae) in Connecticut, USA. Journal of Medical Entomology 38: 774–779.

Darsie, R. F., Jr. 2002. Revision of Darsie and Ward (1981) to include *Ochlerotatus japonicus* Theobald and a checklist of species referred to the genus *Ochlerotatus* in the Nearctic region. Journal of the American Mosquito Control Association 18: 237–240.

Darsie, R. F., Jr. and R. A. Ward. 1981. Identification and geographical distribution of the mosquitoes of North America, north of Mexico. Mosquito Systematics (Supplement) 1: 1–313.

Fonseca, D. M., S. Campbell, W. J. Crans, M. Mogi, I. Miyagi, T. Toma, M. Bullians, T. G. Andreadis, R. L. Berry, B. Pagac, M. R. Sardelis, and R. C. Wilkerson. 2001. *Aedes* (*Finlaya*) *japonicus* (Diptera: Culicidae), a newly recognized mosquito in the United States: analyses of genetic variation in the United States and putative source populations. Journal of Medical Entomology 38: 135–146.

Harrison, B. A., P. B. Whitt, S. E. Cope, G. R. Payne, S. E. Rankin, L. J. Bohn, F. M. Stell, and C. J. Neely. 2002. Mosquitoes (Diptera: Culicidae) collected near the Great Dismal Swamp: new state records, notes on certain species, and a revised checklist for Virginia. Proceedings of the Entomological Society of Washington 104: 655–662.

Peyton, E. L., S. R. Campbell, T. M. Candeletti, M. Romanowski, and W. J. Crans. 1999. *Aedes* (*Finlaya*) *japonicus japonicus* (Theobald), a new introduction into the United States. Journal of the American Mosquito Control Association 15: 238–241.

Scott, J. J., F. L. Carle, and W. J. Crans. 2001. *Ochlerotatus japonicus* collected from natural rockpools in New Jersey. Journal of the American Mosquito Control Association 17: 91–92.

W. K. Reeves and J. A. Korecki, *Department of Entomology, Soils, and Plant Sciences, 114 Long Hall, Clemson University, Clemson, SC 29634, U.S.A. (e-mail: wreeves@clemson.edu).*